In the Claims

This listing of all claims will replace all prior versions, and listings, of claims in the application:

1.   (currently amended)   A quenched and tempered steel wire for cold forging, which has excellent low-temperature impact properties can be cold forged, comprising 0.10 – 0.40 wt% C, 1.0 wt% or less of Si, 0.30 – 2.0 wt% Mn, 0.03 wt% or less of P, 0.03 wt% or less of S, and a balance of Fe and impurities, wherein an austenite grain size is 5 – 20 μm, impact absorption energy is 60 J/cm^2 or more at –40°C, and tensile strength is 70 – 130 kgf/mm^2.

2.   (original) The steel wire as set forth in claim 1, further comprising at least one component selected from the group consisting of 0.05 – 2.0 wt% Cr, 0.05 – 1.5 wt% Mo, and 0.0003 – 0.0050 wt% B.

3.   (currently amended)   A method of producing a steel wire for cold forging comprising:

induction heating steel, which contains 0.10 – 0.40 wt% C, 1.0 wt% or less of Si, 0.30 – 2.0 wt% Mn, 0.03 wt% or less of P, 0.03 wt% or less of S, and a balance of Fe and impurities, to a Ac3 transformation point or higher, without plastic deformation, so that an austenite grain size is 5 – 20 μm;

cooling the heated steel; and

heat treating the cooled steel in such a way that tensile strength is 70 – 130 kgf/mm^2 at a tempering parameter (P) ranging from 21,800 to 30,000,

which is expressed by a following Equation 1, so that impact absorption energy is 60 J/cm^2 or more at –40°C,

Equation 1

$$P = 1.8 \times (T + 273) \times (14.44 + \log t)$$

wherein, T is a tempering temperature (°C), and t is a tempering time (sec).

4.   (original) The method as set forth in claim 3, wherein the steel further comprises at least one component selected from the group consisting of 0.05 – 2.0 wt% Cr, 0.05 – 1.5 wt% Mo, and 0.0003 – 0.0050 wt% B.

5.   (new) The method as set forth in claim 3, wherein the steel is induction heated without plastic deformation.

6.   (new) The method as set forth in claim 4, wherein the steel is induction heated without plastic deformation.